

# **EXERCISE ROUTINE**

## **1. Daily 16 Exercise Phases:**

### **Stretching**

Butterflies  
Quad Stretch (standing)  
Groin Stretch  
Triceps Stretch  
Hamstring Stretch  
Supine Back Stretch  
Posterior Shoulder Stretch  
Press-ups  
Gastrocnemius Stretch  
Hurdles Stretch  
Hip Stretch  
ITB Stretch  
Swimmers Stretch  
Supine Hamstring  
Back Benders  
Iliopsoas Stretch  
Torso Prone Stretch  
Standing Toe Stretch  
Single Leg Hamstring Stretch  
Sitting Hamstring Stretch

### **Mobility**

Side Straddle Hops  
Jack and Jills  
Trunk Twisters  
Sun Gods  
Trunk Rotations  
Neck Rotations  
Steam Engines  
Penguin Walk  
Up Back and Over  
Press-Press Fling  
Hip Rollers

### **Endurance**

Press-ups  
Crunches  
Press-outs  
Dirty Dogs  
Donkey kicks  
Push-ups  
Cross Overs  
Flutter Kicks (Limit)  
One Legged Squat  
Burt Reynolds  
Good Morning Darlings (Limit)  
Lunges  
Prone Flutter Kicks  
Squats

## **II. Upper Body:**

**Push-ups** (chest, triceps)

Wide grip

Narrow grip

Diamond grip

Finger tip

Eight Count Body Builders

**Pull-ups** (back, biceps, & forearm)

Chin-ups

Pull-ups (regular grip)

Wide grips

Narrow grip

Behind the Neck

Interlocking grip

## **III. Lower Body:**

Cross Overs

Crunches

Stomach Pump-ups

Good Morning Darlings (Limit)

One Legged Squat

Vee-ups

Prone Flutter Kicks

Prone Back Extensions

Flutter Kicks (Limit)

Hip Rollers

## **IV. Aerobic Routines:**

1.5 Mile Run

3.0 Mile Run

Ladder Runs

Indian Runs

“Obstacle” Course

“Confidence” Course

## 1. SWIMMERS STRETCH



Not Recommended



Recommended

**DESCRIPTION:** Clasp hands together behind the backed, palms up. While bending over from the waist, slowly pull the arms up and toward the head.

**TYPE OF EXERCISE:** Static stretch for the chest and anterior shoulder muscles.

**RECOMMENDATION:** Modify. Perform this exercise either seated or standing without bending over. This stretch should be performed with thumbs pointing downward throughout the stretch.

**DISCUSSION:** This exercise is often performed while bending over at the waist. The technique was not recommended because it puts undue mechanical stress on the back.

## 2. POSTERIOR SHOULDER STRETCH



Left Side



Right Side

**DESCRIPTION:** Bring the arm that is to be stretched across the chest. Use the opposite arm to pull the arm being stretched towards the chest until the stretch is felt in the posterior shoulder.

**TYPE OF EXERCISE:** Static stretch for the posterior shoulder muscles.

**RECOMMENDATION:** Add.

DISCUSSION: There are several stretches used during NSW calisthenics for the anterior shoulder muscles, but none for the posterior shoulder muscles.

### 3. **JACK AND JILL**



Count 1



Count 2



Count 3



Count 4

DESCRIPTION: This is a four-count exercise. Begin from a standing position, with one arm elevated above the head and the other arm down and slightly away from the body. On the first count both arms are pulled backward, stretching the chest muscles, and released. The second count repeats the first movement. On the third count, arms exchange positions and again pull toward the back and release. Repeat this movement on the fourth movement.

TYPE OF EXERCISE: Dynamic stretch for the chest and anterior shoulder.

RECOMMENDATION: This exercise should be performed slowly with controlled movement.

### 4. **PRESS-PRESS-FLING**



**DESCRIPTION:** This is a three-count exercise. Begin from a standing position with arms bent, fists midline at the chest level, and elbows out to the side. On the first count, pull elbows backwards toward the midline of the back, stretching the chest muscles, and release. Repeat the same movement on the second count. On the third count, extend arms out and backwards, stretching the chest muscles.

**TYPE OF EXERCISE:** Dynamic stretch for the chest and anterior shoulders.

**RECOMMENDATION:** This exercise should be performed slowly with controlled movements.

## 5. UP BACK AND OVER



**DESCRIPTION:** This is four-count exercise. Begin from a standing position with arms at sides. On the first count, bring both arms forward and upward. On the second, bring both arms down and back. On the fourth count, bring both arms forward, up, back, and around to complete a full circle.

**TYPE OF EXERCISE:** Dynamic stretch for the shoulder, chest, and back.

**RECOMMENDATION:** This exercise should be performed slowly with controlled movement.

## 6. TRICEP STRETCH



DESCRIPTION: Standing erect, bring the arm to be stretched up and back so that the elbow is pointing toward the sky and the hand rests between the shoulder blades. Gently pull the arm toward the midline behind the head to stretch the triceps muscle.

TYPE OF EXERCISE: Static stretch for triceps.

RECOMMENDATION: Keep.

## 7. **TORSO PRONE STRETCH**



DESCRIPTION: Begin lying on stomach (prone) with hands flat on the deck as for a push-up. Extend the arms so that the upper torso lifts off the deck.

TYPE OF EXERCISE: Static stretch for the abdominal.

RECOMMENDATION: Keep.

DISCUSSION: This exercise serves as a passive abdominal stretch, usually following abdominal strengthening exercises such as sit-ups. The goal of this exercise is not to fully extend the arms, but to stretch the abdominal. Therefore, the stretch should only be done to point that the pelvis begins to lift off the deck.

## 8. **SUPINE BACK STRETCH**



DESCRIPTION: While lying on back (supine), bring both knees up and toward the chest. Place hands behind the knees and gently pull both legs toward the chest, stretching the back muscles.

TYPE OF EXERCISE: Static stretch for the back extensors.

RECOMMENDATION: Add.

DISCUSSION: This is an excellent stretch for the lower back. It can help relieve muscle spasm and reduce the risk of injury (muscle strain) to the back muscles. When performing this stretch, one may initially feel increased tightness or pain. When a muscle is stretched, an automatic reflex will initially cause the muscle to contract. Therefore, this stretch should be held until one could feel the muscle relax and the tightness subside. Some physical therapists recommend this stretch be held for over a minute.

## 9. TRUCK TWISTERS



Not Recommended



Recommended

DESCRIPTION: Starting from standing position with hands behind the head, twist the upper torso to one side, and then to the other.

TYPE OF EXERCISE: Dynamic stretch for the abdominal, including the obliques.

RECOMMENDATION: Modify. This exercise should be performed seated using controlled movements.

DISCUSSION: This exercise is frequently performed in a misguided attempt to strengthen the abdominal. It should be performed from a seated position (instead standing) to avoid stress on the knee.

## 10. TRUNK ROTATIONS



Starting Position	Count 1	Count 2	Count 3	Count 4
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DESCRIPTION: This is a four count exercise beginning from a standing position legs shoulder-width apart, knees slightly bent. On the first count, bend forward at the waist flexing the torso. On the second count, bend the torso laterally. On the third count, extend the torso backward, and on the fourth count, bend the torso laterally to the remaining side.

TYPE OF EXERCISE: Dynamic stretch for abdominal, including the obliques, and the hip flexors.

RECOMMENDATION: Modify. Perform this exercise slowly and with bent knees. Keep the legs slightly bent when bending backwards to avoid hyperextension of the back.

## 11. **ILIOPSOAS STRETCH**



DESCRIPTION: Begin from a standing position. Step forward with one leg, placing one foot in front of the other. Keep both legs slightly bent. Weight should be distributed toward the front foot. Flatten the back and tuck the hips under, stretching the iliopsoas muscle on the front of the leg. For added stretch, either lean slightly back with the upper torso or bend further at the knees.

TYPE OF EXERCISE: Static stretch for the iliopsoas muscle.

RECOMMENDATION: Add.

DISCUSSION: The iliopsoas stretch should be incorporated into the NSW calisthenics program to offset the exercise number of hip flexor condition exercise in the current NSW calisthenics program. As previously stated, over-development of hip flexor plays a major role in the development of low-back pain.



## 12. HIP STRETCH



**DESCRIPTION:** Begin by lying with back on the deck, knees bent, and feet flat on the deck. Cross one leg so that the ankle is resting on the knee of the other leg. Slowly lift the one leg off the deck and move it toward the chest. Stretch should be felt in the hip of the crossed leg.

**TYPE OF EXERCISE:** Static stretch for hip extensors.

**RECOMMENDATION:** Add.

**DISCUSSION:** This stretch should be added as there are currently no stretches, which isolate the hip extensors.

## 13. GROIN STRETCH



**DESCRIPTION:** Begin by standing with legs far enough apart to allow for sufficient and toes pointed slightly outward. Shift body weight to one side while bending the leg on that side. The stretch be felt on the inner aspect of the aspect of the thigh of the straight leg.

**TYPE OF EXERCISE:** Static stretch for leg adductors.

**RECOMMENDATION:** Keep. Pay proper attention to technique.

**DISCUSSION:** Ample time should be allowed to get into proper position for this stretch, and it should be held for at least 10 seconds. The bent knee should always be aligned vertically over the heel, and should never exceed 90 degrees of flexion. The compression behind the kneecap increases markedly at 60 degrees of flexion, and increases even more markedly at 90 degrees of flexion. Keeping the knee aligned over the toe is an easy way to ensure proper technique. This stretch may be performed upright or bent over at the waist, provided the weight of the upper body is supported by the arms. The angle of the

knee may be elevated, as on the upward slope of a hill. Keep the foot of the leg being stretched pointed upward.

#### 14. **HURDLER'S STRETCH (Quad Stretch)**



**DESCRIPTION:** Begin from the sitting position, extend one leg forward and out. Keep the other leg flexed and tucked behind the hips. Either lean back until the upper torso rests on the deck, or gradually extend the upper torso backward to stretch the muscles in the bent leg.

**TYPE OF EXERCISE:** Static stretch for the leg extensors and hip flexors.

**RECOMMENDATION:** Keep, however pay special attention to technique. The standing Quad stretch may be a more effective exercise.

**DISCUSSION:** There is a potential for injury to the menisci and ligaments of the bent knee. This exercise, if performed at all, should begin from a seated position, leaning back until the leg begins to come off the ground. The panel suggested that the Iliopsoas Stretch and the Standing Quad Stretch be added as they are more efficient exercises for the hip flexor and/or leg extensor muscles as these exercises do not stress the knee.

#### 15. **STANDING QUAD STRETCH**



**DESCRIPTION:** While standing, bend one leg back toward the buttocks stretching the front of the bent leg. Use the hand on the same side as a bent leg to hold the stretch. Tilting the pelvis forward will engage the hip flexors. Knees should be kept parallel, underneath the hips.

TYPE OF EXERCISE: Static stretch for the leg extensors and hip flexors.

RECOMMENDATION: Add.

DISCUSSION:

## 16. **BACK BENDERS**



DESCRIPTION: Begin from the seated position with legs extended out to the side as far as possible, arms bent, and hands on the forehead. Bend the upper torso forward stretching the back of the legs and the groin.

TYPE OF EXERCISE: Static stretch for leg flexors and hip/thigh adductors.

RECOMMENDATION: Keep. Pay close attention to technique.

DISCUSSION: Keep the back straight throughout this exercise because of the potential for injury to the discs and lower back. The purpose is to stretch the muscles in the legs, not to touch your nose to the ground.

## 17. **HURDLER'S STRETCH (Hamstring Stretch)**



DESCRIPTION: From a sitting position, extend one leg out while tucking the other leg in front of the hips with the knee pointing outward. Bend the torso forward toward the knee of the extended leg, stretching the muscles in the back of the leg.

TYPE OF EXERCISE: Static stretch for the leg flexors.

RECOMMENDATION: Keep.

DISCUSSION:

**18. SEATED HEAD TO KNESS (Sitting Hamstring)**



DESCRIPTION: From a sitting position, extend the legs forward and bend the torso toward the knees, stretching the back of the legs.

TYPE OF EXERCISE: Static stretch for the leg flexors.

RECOMMENDATION: Modify. Keep the knees slightly bent and the back flat throughout.

DISCUSSION: Other suggestions included adding the Single Leg Hamstring Stretch and the Supine Hamstring Stretch.

**19. SINGLE LEG HAMSTRING**



DESCRIPTION: from a sitting position, bring one knee up to the chest and extend the leg. Hold the stretch by grasping behind the knee. Keep back flat throughout stretch.

TYPE OF EXERCISE: Static stretch for the leg flexors.

RECOMMENDATION: Add.

DISCUSSION:

## 20. SUPINE HAMSTRING



DESCRIPTION: Begin by lying with back on the deck (supine). Bending at the knees, bring one leg toward the chest grasping the leg with both hands just below the knee. Slowly extend the bent leg while keeping the back flat on the deck.

TYPE OF EXERCISE: Static stretch for the leg flexors.

RECOMMENDATION: Add.

DISCUSSION:

## 21. BUTTERFLIES



DESCRIPTION: Begin by sitting with legs bent and the bottoms of the feet together. Grasp the feet and push the legs to the floor using the elbows while bending the upper torso toward the feet.

TYPE OF EXERCISE: Static stretch for the hip/thigh adductors.

RECOMMENDATION: Modify. Keep the back flat and grasp the ankles instead of the toes.

DISCUSSION: Flattening the back decreases the stress on the lower back and ensures that the correct muscles are being stretched. Grabbing the ankles instead of the toes prevents one from pulling the ligaments of the ankle (flexor retinaculum, the calcaneofibular, lateral talocalcaneal, and deltoid). These ligaments, located on the lateral aspect of the ankle (i.e., side facing out), are the ones most commonly damaged by ankle sprains.

**22. BUD/S KNEE (ITB Stretch)**



**DESCRIPTION:** Perform while seated, with one leg extended, and the other leg crossed over the extended leg at the knee. Turn the upper torso toward the bent leg stretching the iliotibial band of the leg. Use the elbow on the side of the straight leg to hold the stretch.

**TYPE OF EXERCISE:** Static stretch for the truck and iliotibial band.

**RECOMMENDATION:** Keep.

**DISCUSSION:** This exercise was highly recommended due to high frequency of iliotibial band injuries caused by running.

**23. STANDING TOE POINTERS**



**DESCRIPTION:** Start from a standing position with body weight over the heels. Flex and extend the feet and toes. Stretch should be felt in both the calf muscles (gastrocnemius) and muscles in front of the shins (anterior tibialis). As an alternative, walk on the heels with toes pointed upward.

**TYPE OF EXERCISE:** Dynamic stretch for the gastrocnemius. Conditioning exercise for the anterior tibialis.

**RECOMMENDATION:** Keep. This is a good pre-running stretch that helps prevent shin splints.

DISCUSSION:

## 24. **PENGUIN WALK**



DESCRIPTION: While standing with the weight over the heels, flex feet and toes upward, stretching the calf muscles. Maintain this position and walk on the heels.

TYPE OF EXERCISE: Static stretch for the gastrocnemius. Conditioning exercise for the anterior tibialis.

RECOMMENDATION: Keep.

DISCUSSION:

## 25. **GASTROCNEMIUS STRETCH**



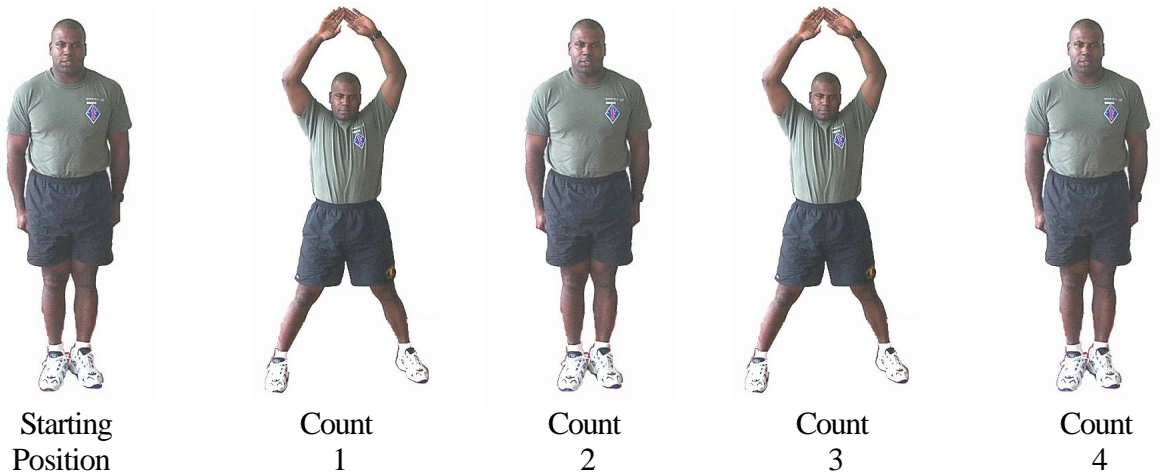
DESCRIPTION: Standing on a tilt board, on the edge of a stair, or curb, flex the foot stretching the calf muscles. Keep the leg of the stretched muscle straight.

TYPE OF EXERCISE: Static stretch for the gastrocnemius muscle.

RECOMMENDATION: Add.

DISCUSSION: Two muscles, the V and the soleus, comprise the calf musculature. The Gastrocnemius Stretch and the Soleus Stretch can also be performed dynamically. Both are good exercises to be done prior to a workout involving running or walking. Remember to warm-up prior to stretching.

## 26. **SIDE STRADDLE HOPS** (Jumping Jacks)



DESCRIPTION: this is a four-count exercise. Begin from a standing position with feet together and hands at sides. On the first count, jump up while bringing hands together over the head and landing with feet apart. On second count, jump back to the starting position. The third count repeats the action performed during the first count, and the fourth count returns to the starting position.

TYPE OF EXERCISE: Aerobic.

RECOMMENDATION: Keep.

DISCUSSION: This is good warm-up exercise.

## 27. **NECK ROTATIONS**



DESCRIPTION: This exercise should also be performed while lying on the stomach in order to strengthen the neck extensors, which move the head back. If the goal is to strengthen the neck, some form of resistance should be added (e.g., a towel or hand).



TYPE OF EXERCISE:

RECOMMENDATION:

DISCUSSION:

**28. SUN GODS**



DESCRIPTION: Extend the arms out and to the side and move them in small circles.

TYPE OF EXERCISE: Endurance exercise for shoulder muscles.

RECOMMENDATION:

DISCUSSION:

**29. PUSH-UPS (Standard, Wide, or Narrow)**



DESCRIPTION: this is a two-count exercise. Begin by lying on the stomach with hands and feet on the deck, the arms extended, and the head facing forward. On the first count, bend the elbows to at least 90-degree angle, lowering the chest toward the deck. On the second count, extend the arms back to the starting position.

**TYPE OF EXERCISE:** Conditioning exercise which primarily incorporate chest and anterior shoulder muscles, and secondarily incorporate the triceps and abdominal muscles.

**RECOMMENDATION:** Keep.

**DISCUSSION:** These exercises should be performed first with hands placed wider apart than shoulder width (Wide Push-Ups), then gradually move the hands closer together so that the smaller muscles (i.e., triceps) are worked last. Starting wide circumvents the problem of fatiguing the triceps prior to fatiguing the pectorals.

### 30. **FINGER-TIP PUSH-UPS**



**DESCRIPTION:** Perform the same as a regular push-up, but support the weight on the fingertips.

**TYPE OF EXERCISE:** Conditioning exercise, which incorporates the forearm muscles in addition to those muscle groups, used in regular push-ups.

**RECOMMENDATION:** Add.

**DISCUSSION:** This is good exercise to build forearm and grip strength, which is important in the operational setting.

### 31. **DIAMOND PUSH-UPS** (Triceps)



**DESCRIPTION:** this is a two-count exercise. Begin by lying on the stomach, with feet and hands on the deck, fingers spread, thumb and index fingers on both hands almost touching each other, elbows extend, and body straight. On the first count, bend the elbows at least 90 degrees using the arms to support body weight. On the second count, return to the starting position.

**TYPE OF EXERCISE:** Conditioning exercise incorporating the triceps muscles in addition to muscle groups used in regular push-ups.

**RECOMMENDATION:** Keep.

**DISCUSSION:**

### 32. **DIVE BOMBERS PUSH-UPS**



Starting position &  
Count 4



Count 1



Count 2



Count 3

**DESCRIPTION:** This is a two-count exercise. Start by lying on the stomach with the feet spread approximately 3-ft. apart, hands on the deck, elbows fully extended, and slightly lifted. On the first count, the upper torso sweeps down toward the deck between and through the hands while bending the elbows. The resting position is the same as the down position of a basic push-up. On the second count, the upper torso sweeps back and up while the elbows extend to return to the starting position.

**TYPE OF EXERCISE:** Conditioning exercise for the forearms, chest, anterior deltoids, and triceps.

**RECOMMENDATION:** Keep.

**DISCUSSION:**

### 33. EIGHT COUNT BODY BUILDERS



Starting Position



Count 1



Count 2



Count 3



Count 4



Count 5  
(Legs Spread)



Count 6



Count 7



Count 8  
(Starting Position)

**DESCRIPTION:** This is a eight-count exercise that starts from the a standing position. On the first count, bend the legs and place the hands on deck. On the second count, extend both legs back supporting the body weight with the extended arms (starting position for a push-ups). On third count, bend the elbows, lowering the chest toward the deck )a push-up). On the fourth count, extend the arms. On the fifth count, separate the legs while keeping the arms extended. On the sixth count, bring the legs back together as they were on the fourth count. On the seventh count, return to the starting position.

**TYPE OF EXERCISE:** Conditioning exercise for chest and leg muscles.

**RECOMMENDATION:** Keep.

DISCUSSION:

34. **PULL-UPS** (Wide, Standard, Narrow, Behind the Neck, or Interlocking)



Wide Grip



Standard Grip



Narrow Grip



Behind the Neck



Interlocking

**DESCRIPTION:** This is two count exercise beginning at a dead hang from a horizontal bar with arms shoulder-width apart and palms facing outward. Pull the body on the first count until the chin touches the top bar. Return to the starting position on the second count. No kicking or kip-up allowed.

**TYPE OF EXERCISE:** Conditioning exercise, which incorporates all muscles of the back and forearm.

RECOMMENDATION: Keep.

DISCUSSION: Pull-ups are especially good for developing grip strength, which is important in the operational setting. Adding athletic tape to the bar for a more open-handed grip was highly recommended. Many athletes find they can not transfer the strength they develop in the weight room to improvements in performance in the field because a lot of the gripping they do is with a more open hand.

### 35. **CHIN-UPS**



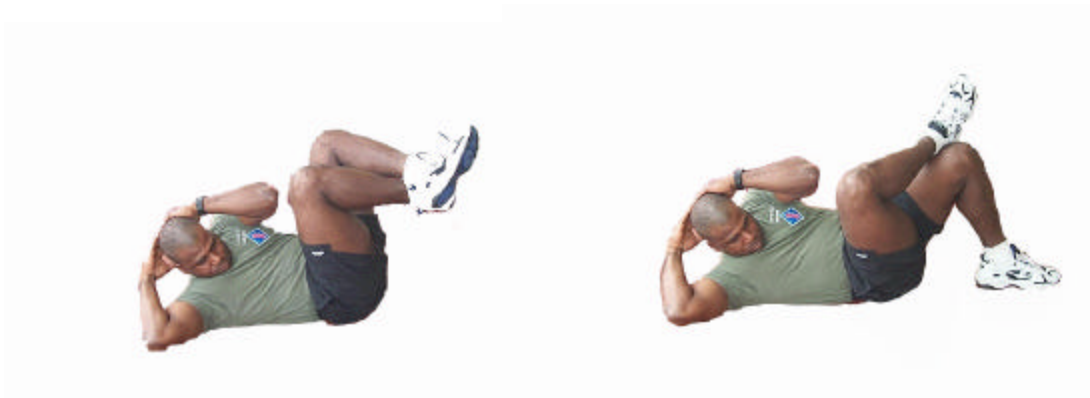
DESCRIPTION: This is two-count exercise beginning at a dead hang from a horizontal bar with arms shoulder-width apart and palms facing inward. Pull the body up on the first count until the chin touches the top of the bar. Return to the starting position on the second count. No kicking or kip-up is allowed.

TYPE OF EXERCISE: Conditioning exercise which incorporate back and biceps muscles.

RECOMMENDATION: Keep.

DISCUSSION: The panel discussed at length the importance of back and grip strength in the operational setting. The consensus was that chin-ups are an important exercise for developing back strength, while pull-ups are a better exercise for developing grip strength.

### 36. **ELBOW TO KNEE/CROSS OVERS – LEGS BENT**





**DESCRIPTION:** Begin by lying on the back with the hands clasped behind the head. Legs can be either bent at the knees with feet on the deck or bent with knees toward the chest (feet elevated from the deck), or with one leg crossed over the knee of the other leg. Slowly lift and twist the torso bringing one shoulder toward the knee of the opposite leg. Return to starting position. Perform exercise on both sides.

**TYPE OF EXERCISE:** Conditioning exercise for the abdominal and obliques.

**RECOMMENDATION:** Keep.

**DISCUSSION:** Keeping the knees bent and feet either on the deck or elevated protects the lower back.

### 37. **CRUNCHES**



Not Recommended



Recommended

**DESCRIPTION:** lying on the back with legs bent and elevated off the deck, either place the hands behind the neck or cross the arms on the chest. Lift the upper torso 10 to 12 inches off the ground, then return to the starting position.

**TYPE OF EXERCISE:** Conditioning exercise for the abdominal.

**RECOMMENDATION:** Keep.

**DISCUSSION:** There are many variations to this exercise. For example, the legs may be bent with feet on the deck, bent with knees towards the chest and feet elevated, or extended vertically (as in Vee-Ups). The arms also may be placed in several positions including alongside the body (easiest), across the chest, hands behind the head, or hands clasped above the head (most difficult).



### 38. **HIP ROLLERS**



DESCRIPTION: Lying on back with legs bent and elevated off the deck, slowly bring both knees down together on one side until the lower back begins to lift off the deck. Bring the knees back to the starting position, then repeat on the other side.

TYPE OF EXERCISE: Conditioning exercise for the abdominal.

RECOMMENDATION: Keep.

DISCUSSION:

### 39. **STOMACH PUMP-UPS**



DESCRIPTION: begin by lying on the back with knees bent, feet on the deck, and hands on hips. Then, lift and lower the upper torso.

TYPE OF EXERCISE: Conditioning exercise for the abdominal and hip flexors.

RECOMMENDATION: Keep. Limit use of this exercise.

DISCUSSION: Keeping the mid to low back on the ground prevents engagements of the hip flexors.



40. **FLUTTER KICKS**



Starting Position



Count 1 & 3



Count 2 & 4

DESCRIPTION: this is four-count exercise. Start by lying on the back, with hands under the hips, legs extended, and feet together, 6 inches above the deck. On the first count, lift the right leg  $1\frac{1}{2}$  feet, keeping the leg straight. On the second count, lift the left leg to same position while returning the right leg to the starting. On the fourth count, shift legs once more.

TYPE OF EXERCISE: Conditioning exercise for the abdominal and hip flexors.

RECOMMENDATION: Modify. Limit use and maintain proper technique.

DISCUSSION: For a full discussion of panel recommendation, please refer to the Sit-Ups/Flutter Kicks section on page 38.

41. **GOOD MORNING DARLINGS**



Starting Position  
Count 2 & 4



Count 1 & 3

**DESCRIPTION:** This is a four-count exercise. Start by lying on the back, with hands under the hips, legs extended, and feet together, 6 inches above the deck. On the first count, spread the legs 2 to 3 feet apart. On the second count, bring the legs back together. The third count, repeats the first position. On the fourth count, the legs come back together.

**TYPE OF EXERCISE:** Conditioning exercise for the abdominal and hip flexors.

**RECOMMENDATION:** Modify. Limit use and maintain proper technique.

**DISCUSSION:** This exercise has potential for injury to the discs and lower back. For a full discussion of panel recommendations, please refer to the Sit-Ups/Flutter Kicks section on page 38.

#### **42. VEE-UPS**



**DESCRIPTION:** Lying on the back with arms above the head, bring the legs, arms, and torso toward the midline.

**TYPE OF EXERCISE:** Conditioning exercise for the abdominal and hip flexors.

**RECOMMENDATION:** Modify. Keep the legs vertical throughout the exercise.

**DISCUSSION:** This exercise has the potential for injury to the discs and lower back. It was recommended to perform this exercise slowly and hold it longer at the peak. The legs should be kept in a vertical position throughout the exercise. One can then touch the toes from the lying position or place the hands behind the head slowly bring the chest up. This modification would take out the hip flexor work and make Vee-Ups a safe abdominal exercise.

#### 43. **PRONE FLUTTER KICKS**



DESCRIPTION: This exercise is the Flutter Kick performed lying on the stomach.

TYPE OF EXERCISE: Conditioning exercise for the back and hip extensors.

RECOMMENDATION: Keep.

DISCUSSION: Avoid hyperextension of the back. Exercise that work the hip extensors were highly recommended because they help balance out the hip flexor conditioning.

#### 44. **PRONE BACK EXTENSION**



DESCRIPTION: Lying face down on the deck, hands clasped behind the back, lift the upper torso off the deck, hold, and return to starting position.

TYPE OF EXERCISE: Conditioning exercise for the back and hip extensors.

RECOMMENDATION: Keep.

DISCUSSION: Avoid hyperextension of the back. Placement of the hands alters the difficulty; behind the back is the easiest, behind the head is more difficult, straight out in front is the most difficult.

#### 45. **DIRTY DOGS**



DESCRIPTION: On hands and knees, keeping the legs bent, lift one leg, knee pointing outward, to the end of the range of motion. Repeat this movement until leg muscles burn, then switch to the other leg.

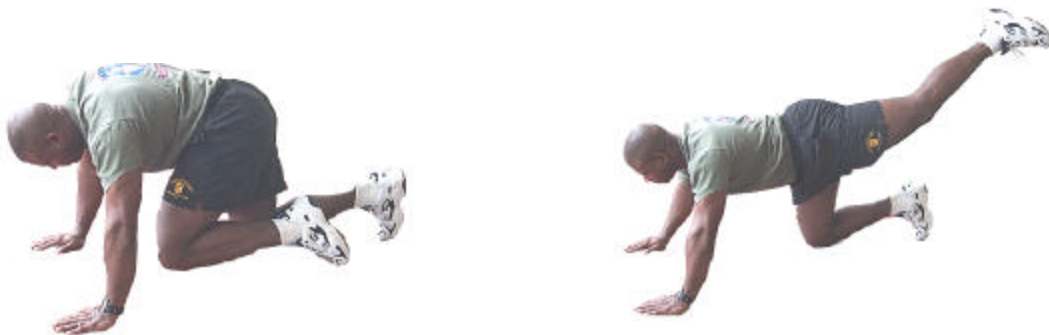
This exercise may also be done lying on the side, Bend legs at 90 degrees from the torso. Lift and lower the top leg.

TYPE OF EXERCISE: Conditioning exercise for the hip/thigh abductors.

RECOMMENDATION: Keep.

DISCUSSION: this strengthening exercise for the hip/thigh abductors was recommended because the NSW PT program currently contains no hip abductor exercises. Additional exercises for the hip/thigh abductors (e.g., Burt Reynolds) were also suggested for a balanced workout.

#### 46. **DONKEY KICKS**



DESCRIPTION: On hands and knees, extend one leg out and behind, then bring it back. Repeat this movement using the same leg until a burn is felt in the hips and lower back. The opposite leg should then be exercised.

TYPE OF EXERCISE: Conditioning exercise for the hip extensors.

RECOMMENDATION: Add.

DISCUSSION: This exercise may be combined with Dirty Dogs. The same leg would be lifted to the side and returned, then extended behind and returned. To avoid hyperextension of the back, the leg should not be raised higher than the hip.

**47. BURT REYNOLDS**



DESCRIPTION: Lying on the side in a straight line, bend the top leg and place it in front of the knee of the opposite leg. Raise and lower the straight leg approximately 8 inches off the deck until fatigued. This exercise should be felt in the inner thigh.

TYPE OF EXERCISE: Conditioning exercise for the hip adductors.

RECOMMENDATION: Add.

DISCUSSION: This exercise is beneficial for rock climbing.

**48. PLYOMETRICS**



Bunny Hops



Side to Side





Starting Position  
Count 1 & 3



Count 2 & 4

**DESCRIPTION:** Plyometrics is a general category consisting of a variety of exercises including Bunny Hops, Lunges, and Leap Frogs.

**TYPE OF EXERCISE:** Conditioning exercise for all hip and leg muscles.

**RECOMMENDATION:** Keep. These exercises are major components of an ideal conditioning program.

**DISCUSSION:** Plyometrics develop muscles strength and power both concentrically (contraction of the muscle while it shortens) and eccentrically (contraction of the muscle while it lengthens). Plyometrics also improve proprioception (peripheral sensory feedback, balance) which can both prevent and rehabilitate injuries.

Plyometrics should be only performed after the body has warmed up.

As with other exercises, attention should be paid to proper technique. For example, when performing lunges, the knee angle should not exceed 90 degrees. Any movement beyond this angle places undue stress on the cartilage and ligaments. Keeping the knee over and in line with the big toe improves technique. The step should be straight out, not to the side.

When performing plyometrics, the number of repetitions should be limited to avoid deterioration of technique. When technique begins to fail, switch to a different exercise. Slowing the count or cadence can also help offset fatigue.

#### 49. ONE LEGGED SQUAT



DESCRIPTION: Using one leg to support the body weight, bend the leg until the thigh is almost parallel to the ground and return to starting position. Repeat using other leg.

TYPE OF EXERCISE: Conditioning exercise for the hip and thigh muscles.

RECOMMENDATION: Add.

DISCUSSION: This exercise is good when equipment and/or weights are unavailable. Squat exercises should be performed when the upper portion of the legs is parallel to the ground. Anything lower places excessive stress on the knee. This exercise also helps improve proprioception (peripheral sensory feedback, balance).